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October 20, 1999

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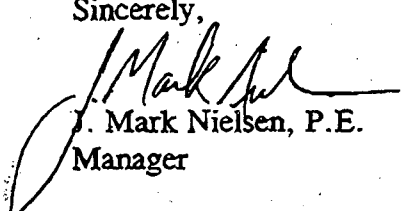
Re: Cornell-Dubilier Electronics Site, South Plainfield, New Jersey
Preliminary Ground Water Assessment Report

Dear Mr. Sundram:

On behalf of Cornell Dubilier Electronics, Inc. and Dana Corporation, ENVIRON Corporation is providing for your review a copy of the *Preliminary Ground Water Assessment Report for the Hamilton Industrial Park Site*. This report presents the methodology and results of ground water sampling activities conducted by ENVIRON in July 1999 at the above-referenced site.

Please call me at (609) 243-9859 if you should have any questions regarding the information presented in the enclosed report.

Sincerely,


J. Mark Nielsen, P.E.
Manager

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Enclosure

cc: M. Conyngham, Esq., Foley Hoag & Eliot, LLP
M. Last, Esq., Mintz, Leven, Cohn, Ferris, Glovsky & Popeo, P.C.
M. Scott, ENVIRON

This week

- move FOIA request

- move DB Report
• review tables

✓ get me on
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meeting

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DOL
response

**PRELIMINARY GROUND WATER ASSESSMENT REPORT
FOR THE
HAMILTON INDUSTRIAL PARK SITE**

Prepared for

Foley Hoag & Eliot, LLP
Mintz, Levin, Cohn, Ferris, Glovsky & Popeo, P.C.

Prepared by

ENVIRON Corporation
Princeton, New Jersey

October 1999

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(July 1998)

I. INTRODUCTION

A. Purpose and Scope

Prior sampling activities conducted at the Hamilton Industrial Park (the Site) in South Plainfield, New Jersey by the United States Environmental Protection Agency (USEPA) have revealed elevated levels of polychlorinated biphenyls (PCBs) in site soils and sediments. The Hamilton Industrial Park is currently listed on the National Priority List as a federal Superfund site under the Comprehensive Environmental Responsibility, Compensation and Liability Act (CERCLA). ENVIRON Corporation (ENVIRON) was retained to perform a preliminary evaluation of ground water conditions at the Site.

This report discusses the methods used to conduct this preliminary evaluation of on-Site ground water conditions and presents a summary of the evaluation results.

B. Site Description

The Site is an approximately 25-acre commercial/industrial property located at 333 Hamilton Boulevard in South Plainfield, Middlesex County, New Jersey. The property is bounded by Hamilton Boulevard to the west, Spicer Avenue to the south, a Conrail railroad line and an unnamed tributary to Bound Brook to the north and northeast, and undeveloped land to the east. The Site is currently occupied by several industrial and commercial tenants. Approximately one-half of the Site is paved with asphalt or covered by structures (see Figure 1). The remaining portion of the Site is vegetated or otherwise vacant land. Site topography is relatively flat, with only a slight to moderate topographic slope from south-southwest to north-northeast.

C. Geology and Hydrogeology

Information compiled by the USEPA during prior investigations at the Site indicates that the shallow subsurface in the vicinity of the Site is composed of layers of sand and gravel designated together as stratified drift. Regional information reported for a site located

approximately 1.8 miles northeast of the site (i.e. Sprague Avenue site), indicates an overburden consisting of alternating layers of sand, gravel, and clay with combined thicknesses of up to approximately 90 feet over a deeper bedrock unit (USEPA 1996). Bedrock in the area of the Site is of the Brunswick Formation, specifically the Brunswick Shale. This regional information indicates that the depth to ground water in the "overburden" aquifer is approximately 50 feet below ground surface (bgs) and that the depth to ground water in the bedrock aquifer is approximately 99 feet bgs (USEPA 1996).

Previous investigations conducted at the Site by USEPA, which have included test pit excavations and soil borings, have reported ground water at depths as shallow as 3 to 4 feet bgs in the northern portion of the Site and at depths varying from 3 to 10 feet bgs in the vacant field area of the Site (USEPA 1997). However, overburden and bedrock ground water conditions at the Site have not been specifically investigated by USEPA.

An initial investigation conducted at the Site by ENVIRON on June 4, 1999 utilizing direct-push sampling equipment (i.e. Geoprobe) revealed an overburden consisting of compacted sands and clays to a depth of between 6 and 13 feet bgs. This overburden was underlain by highly weathered Brunswick Shale which was impenetrable using Geoprobe equipment. During this investigation, no ground water was encountered in the overburden soils or in the upper portions of the weathered bedrock, with the exception of a minimal thickness (approximately 1-inch) of perched water observed at one location near the unnamed tributary to Bound Brook. On June 23, 1999, an exploratory boring using a hollow-stem auger drill rig was completed in the southwestern corner of the property to a terminal depth of 24.5 feet bgs to investigate the depth to bedrock ground water. No ground water was encountered in this boring. ENVIRON concluded that the presence of ground water noted in shallow Site soils during previous investigations was likely perched water from precipitation events and that permanent ground water conditions exist only in the bedrock formation beneath the Site at depths greater than 25 feet.

D. Scope of Work

Based on the available information related to regional and site-specific geologic and hydrogeologic conditions, former site operations and prior USEPA investigative efforts, ENVIRON developed a scope of work to conduct a preliminary investigation of ground water

conditions at the Site in an attempt to identify any significant impact to ground water from prior Site activities. The scope of work developed by ENVIRON specified the installation of a maximum of nine temporary wells over a two-day period utilizing an air-rotary drill rig. The proposed wells locations were distributed across the Site to obtain representative information on Site ground water quality conditions (see Figure 1). However, as discussed in Section II, due to difficult drilling conditions encountered, only three temporary wells were installed during the two-day period.

II. SUMMARY OF FIELD ACTIVITIES

A. Field Work Preparation Activities

In preparation for drilling activities at the Site, a utility location request was called in to the New Jersey One-Call Center. The utility location request was originally called in on May 28, 1999, in anticipation of initial direct-push investigation activities (One-Call Ticket # 991480456). The utility locator request was updated in anticipation of the air-rotary drilling activities under One-Call Ticket # 992010303.

Talon Drilling Company (Talon) of Trenton, New Jersey was retained to complete the air-rotary drilling scope of work. All drilling activities were overseen by a qualified ENVIRON geologist.

B. Drilling Activities

Air-rotary drilling activities were conducted at the Site on July 28 and July 29, 1999 utilizing a REICHDrill model T-650-W air-rotary drilling rig. Drilling was conducted under a blanket permit issued for the Site by the New Jersey Department of Environmental Protection (NJDEP) Bureau of Water Allocation.

Due to obstructions encountered at one location (TW02), only three of the proposed nine temporary wells could be installed in the two-day drilling effort. Temporary wells were completed at locations TW03, TW05 and TW06. Two attempts at drilling temporary well location TW02 were unsuccessful due to the presence of debris in the subsurface.

Ground water was not encountered during drilling in any of the three temporary wells until a depth of between 50 and 55 feet bgs. Each well boring was then drilled to a total depth of approximately 60 feet bgs. Temporary wells consisting of ten feet of 0.01-inch slotted PVC (2-inch, Schedule 40) and 50 to 55 feet of blank PVC riser were installed in each temporary well boring.

During drilling, a cyclone dust collection system was used to limit to the extent possible the dust generated by invasive work activities. All drill cuttings generated were diverted

During drilling, a cyclone dust collection system was used to limit to the extent possible the dust generated by invasive work activities. All drill cuttings generated were diverted through the cyclone and drummed for storage and disposal, pending analytical results of sampling of the drummed materials. In addition, at location TW03 a minimal volume of water was added to the drill cuttings in an effort to further reduce the dust generated during drilling.

All downhole equipment was decontaminated between temporary well locations. At the termination of all sampling activities, the air-rotary drilling rig and all support vehicles were fully decontaminated prior to departing the Site. All decontamination activities were conducted in the area designated by USEPA during prior site investigation activities.

C. Air Monitoring

To ensure that adequate personal protective equipment (PPE) was used throughout invasive work activities, an action level for dust exposure was developed for the well drilling activities. Available soil sampling results were reviewed to determine the maximum PCB concentration in on-Site soils; the maximum reported soil concentration was determined to be 51,000 mg/kg (ppm), while the average soil concentration was determined to be 1,400 mg/kg. Based on the maximum on-site soil PCB concentration, and assuming that approximately 50% of the dust generated would be in the respirable range (i.e. less than 10 microns in diameter), the dust action level was set at 5 mg/m³.

During drilling activities, a miniRAM particulate monitor was used to conduct continuous air monitoring during all dust-generating activities. In addition, a photoionization detector (PID) was used to continuously monitor for the presence and relative concentration of any volatile organic vapors in the work zone. All air monitoring instruments were properly charged and calibrated on each day of use.

No volatile organic vapors were detected with the PID during drilling activities conducted on July 28 and 30, 1999. Continuous dust monitoring conducted in the drilling work zone during drilling activities indicated that dust levels exceeded background values (determined from an upwind area removed from the impact of the drilling activities), but these measured dust levels did not exceed the specified action level. More over, at the downwind edge of the visible dust cloud, dust levels only marginally exceeded the background level. During drilling activities, dust monitoring was also conducted at downwind building entrances in proximity to

the drilling location. No exceedances of background dust levels were noted at any building doorway during drilling activities.

D. Ground Water Sample Collection

After temporary wells at locations TW03, TW05 and TW06 had been installed and the wells had been allowed to stand undisturbed for several hours, ground water samples were collected from each well for off-site laboratory analysis. At the time of sampling, the depth to ground water was approximately 20 to 30 feet bgs in comparison to a depth of 50 to 55 feet bgs observed at the time of drilling, indicating that ground water is under confined conditions. All ground water samples were collected using a new, dedicated, disposable Teflon bailer. Bailers were carefully lowered into each temporary well to minimize physical agitation of the ground water.

Sufficient ground water volume was extracted from each temporary well for the analysis of PCBs and VOCs at the analytical laboratory. Ground water samples were transferred immediately from the bailer to laboratory-provided glassware and then stored on ice in a sealed cooler. Samples were not filtered prior to analysis. Appropriate chain of custody protocols were followed throughout sample handling. Sample shipments were sent to the laboratory within the on-site sample holding times.

To satisfy quality assurance and quality control protocol, one duplicate ground water sample was collected at temporary well location TW06. In addition, a matrix spike and matrix spike duplicate sample was collected for analysis of both PCBs and VOCs from temporary well TW05. Two field rinsate blanks were collected during sampling activities by passing laboratory-provided deionized water through a new, unused, disposable Teflon bailer and into laboratory glassware. Each rinsate blank was analyzed for both PCBs and VOCs. A trip blank was also submitted to the analytical laboratory for analysis of VOCs to evaluate any potential for laboratory cross-contamination.

E. Well Abandonment

At the completion of ground water sampling activities, each temporary well location was properly abandoned using tremie methods and cement/bentonite grout. At location TW02, which was not drilled to significant depth and did not intersect the saturated zone due to the

restore the location to its original grade. Where necessary, asphalt patch was used to restore the paved surface to its original condition.

All PVC materials used to construct the temporary wells were removed from the borings prior to tremie grouting. At temporary well location TW05, a slight but noticeable refracted sheen was observed on the screened interval of PVC removed, as well as on the ground water displaced from the boring during abandonment activities.

A well abandonment report was provided to the NJDEP Bureau of Water Allocation by Talon following the sealing of the three temporary wells.

F. Waste Containment

All drilling cuttings generated during temporary well drilling activities were containerized in steel 55-gallon drums. Each drum was clearly labeled, sealed and staged in a fenced on-Site area pending waste characterization sampling and disposal.

III. GROUND WATER SAMPLING RESULTS

A. Laboratory Methods

Analytical laboratory services were provided by Quanterra, Inc. of Pittsburgh, Pennsylvania. Ground water samples from each temporary well were analyzed for VOCs according to USEPA SW846 Method 8260B and PCBs according to USEPA SW846 Method 8082.

B. Data Validation

All analytical data received from Quanterra related to ground water samples collected during temporary well installation activities were validated by ENVIRON. Validation procedures were based on the *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review* (February 1994). Overall, the data were deemed acceptable as received from the laboratory. Certain detections were qualified as estimated due to problems with calibration standards at the analytical laboratory. Reporting limits for several acetone analyses were rejected as unreliable due to poor response factors in laboratory calibration standards.

C. Ground Water Sampling Results

A total of five ground water samples were collected from the three temporary wells for laboratory analysis. One sample was collected from temporary well TW05 and duplicate samples were collected from temporary well TW06; all three samples were analyzed for VOCs and PCBs. One sample was collected from temporary well TW03 on July 29, 1999 for VOC analysis; however, due to high turbidity conditions observed during sampling on July 29, collection of a sample for PCB analysis was postponed until the following day after the water column had settled for a more appreciable amount of time. On July 30, 1999, the sample for PCB analysis was collected from temporary well TW03; in addition, a sample was collected

for VOC analysis to confirm the results for the sample collected on the previous day. The results for these samples are provided on Table 1 and summarized briefly below.

- At temporary well location TW03, several VOCs were detected in both samples collected at this well. In the sample collected on July 29, 1999, trichloroethene (TCE), tetrachloroethene (PCE) and 1,2-dichloroethene (1,2-DCE) were detected at concentrations of 23 ug/L, 1.1 ug/L and 7.9 ug/L, respectively. In the VOC sample collected on July 30, 1999, TCE, PCE, 1,2-DCE and acetone were detected at concentrations of 22 ug/L, 0.95 J ug/L ("J" indicates that the constituent was positively identified but that the concentration is estimated), 7.1 ug/L and 3.1 J ug/L, respectively. PCBs were not detected in the ground water sample collected from TW03 on July 30, 1999.
- At temporary monitoring well location TW05, TCE was detected at a concentration of 29,000 ug/L and 1,2-DCE was detected at a concentration of 14,000 ug/L. Aroclor 1254 was detected at a concentration of 14 ug/L.
- At temporary monitoring well location TW06, chlorobenzene (11 ug/L), TCE (77 ug/L), PCE (28 ug/L) and 1,2-DCE (37 ug/L) were detected. Benzene (0.79 J ug/L), chlorobenzene (11 ug/L), TCE (76 ug/L), PCE (32 ug/L) and 1,2-DCE (34 ug/L) were detected in the duplicated sample. Aroclor 1242 was reported at 80 ug/L and 130 ug/L in the duplicate samples. Note that based on the review of the supporting laboratory documentation during data validation, it was determined that the PCB chromatogram for this sample did not closely match the chromatogram for the Aroclor 1242 standard. However, since the sample pattern was a better match to the Aroclor 1242 standard than to any other Aroclor standard, the sample concentration was reported as Aroclor 1242. This difference in peak patterns may be attributable to weathering of the PCB constituents.

D. Quality Assurance and Quality Control

One field rinsate blank was collected each of the first two days of ground water sampling during drilling activities. Rinsate blanks were collected by passing laboratory-provided deionized water through an unused, disposable Teflon bailer and into laboratory-provided glassware.

The field rinsate blank collected on July 28, 1999 contained detectable concentrations of acetone (13 ug/L) and methylene chloride (0.51 J ug/L), both common laboratory contaminants. This field rinsate blank also contained a trace concentration of TCE (0.38 J ug/L). The field rinsate blank collected on July 29, 1999 contained acetone at 11 ug/L and methylene chloride at 0.43 J ug/L. Neither field rinsate blank contained detectable concentrations of PCBs. Since, a new disposable bailer was used for sampling each well, laboratory contamination and not cross-contamination between wells is considered to be the likely source at these constituents in the rinsate blanks.

A trip blank was submitted to the analytical laboratory with the ground water samples collected on July 28 and 29, 1999. This trip blank was analyzed for VOCs only. No VOCs were detected in the trip blank.

02-5340A:/PRIN_WP/12075v1.DOC

REFERENCES

United States Environmental Protection Agency (USEPA). 1996. Hazards Ranking System Documentation Record for the Cornell Dublier Electronics, Inc. (CDE) Site, South Plainfield, New Jersey. Report No. 8003-454 Rev. 15 December.

United States Environmental Protection Agency (USEPA). 1997. Memorandum: Removal Site Evaluation for the Cornell-Dubilier Electronics Site (AKA: Hamilton Industrial Park), South Plainfield, Middlesex County, New Jersey. From: N. Magriples, CHMM, On-Scene Coordinator, Removal Action Branch. January 9.

02-S840A:/PRIN_WP/12075v1.DOC

TABLE

TABLE 1: Ground Water Sampling Data Summary
July 28-30, 1999
Hamilton Industrial Park
South Plainfield, Middlesex County, New Jersey

Location	TW-03	TW-03	TW-05	TW-06	TW-06
Matrix	GROUND WATER	GROUND WATER	GROUND WATER	GROUND WATER	GROUND WATER
Collection Date	07/29/1999	07/30/1999	07/28/1999	07/29/1999	07/29/1999
Comments	FIELD DUPLICATE				
Volatile Organic Compounds					
1,2-Dichloroethene (total)	7.9 (1)	7.1 (1)	14000 (1000)	37 (3.1)	34 (3.1)
Acetone	UR (10)	3.1 J (10)	UR (10000)	UR (31)	UR (31)
Benzene	U (1)	U (1)	U (1000)	U (3.1)	0.79 J (3.1)
Chlorobenzene	U (1)	U (1)	U (1000)	11 (3.1)	11 (3.1)
Tetrachloroethene	1.1 (1)	0.95 J (1)	U (1000)	28 (3.1)	32 (3.1)
Trichloroethene	23 (1)	22 (1)	29000 (1000)	77 (3.1)	76 (3.1)
Polychlorinated Biphenyls					
Aroclor-1242	NA	U (1)	U (1)	80 (11)	130 (11)
Aroclor-1254	NA	U (1)	14 (1)	U (11)	U (11)

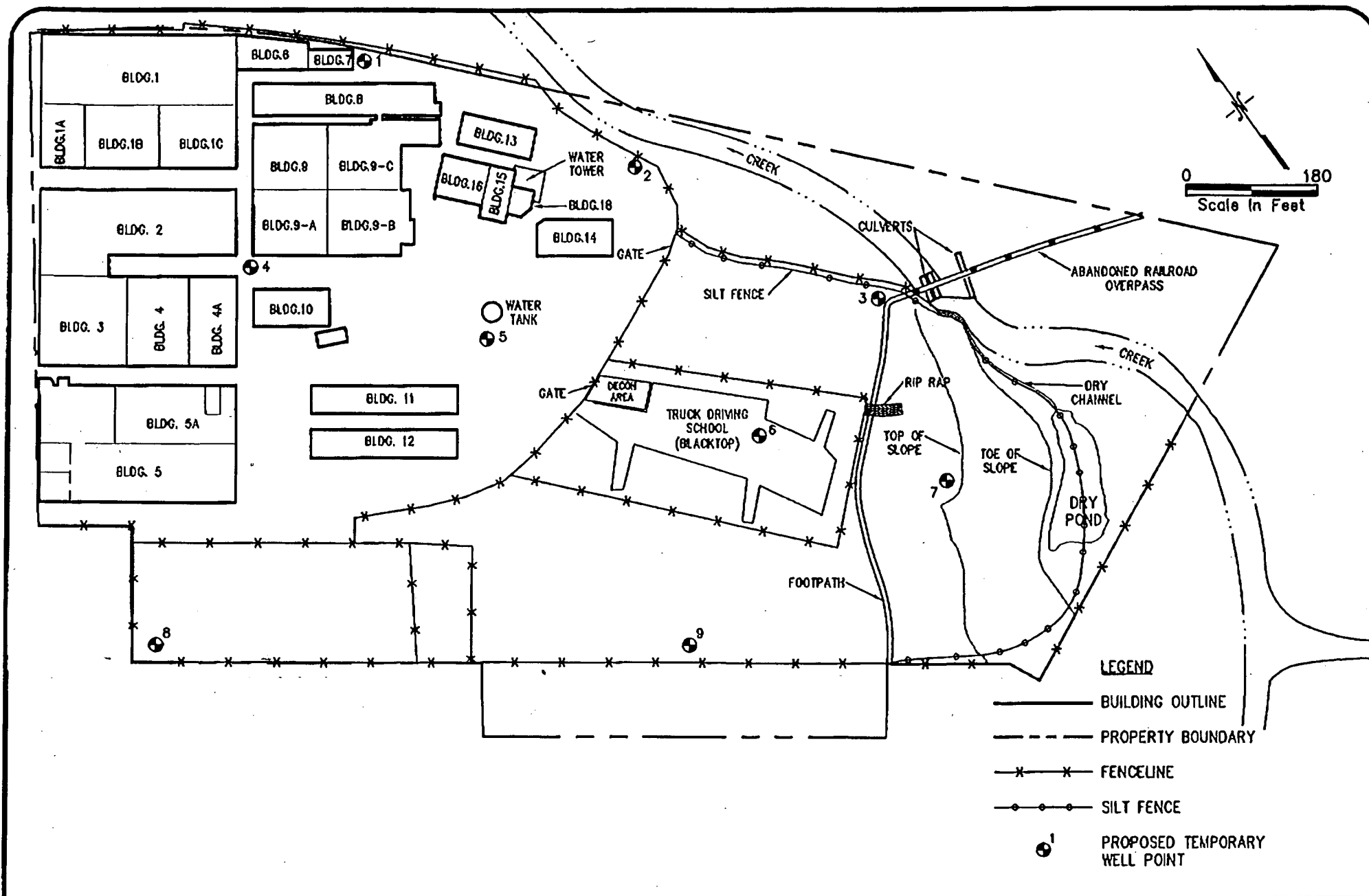
Notes:

- 1 Only constituents which were detected in at least one sample are presented.
- 2 All values are presented in parts per billion (ug/L).

Abbreviations:

- () = Detection limit
- R = Data rejected during validation
- U = Not Detected
- J = Estimated concentration
- NA = Not analyzed

FIGURES



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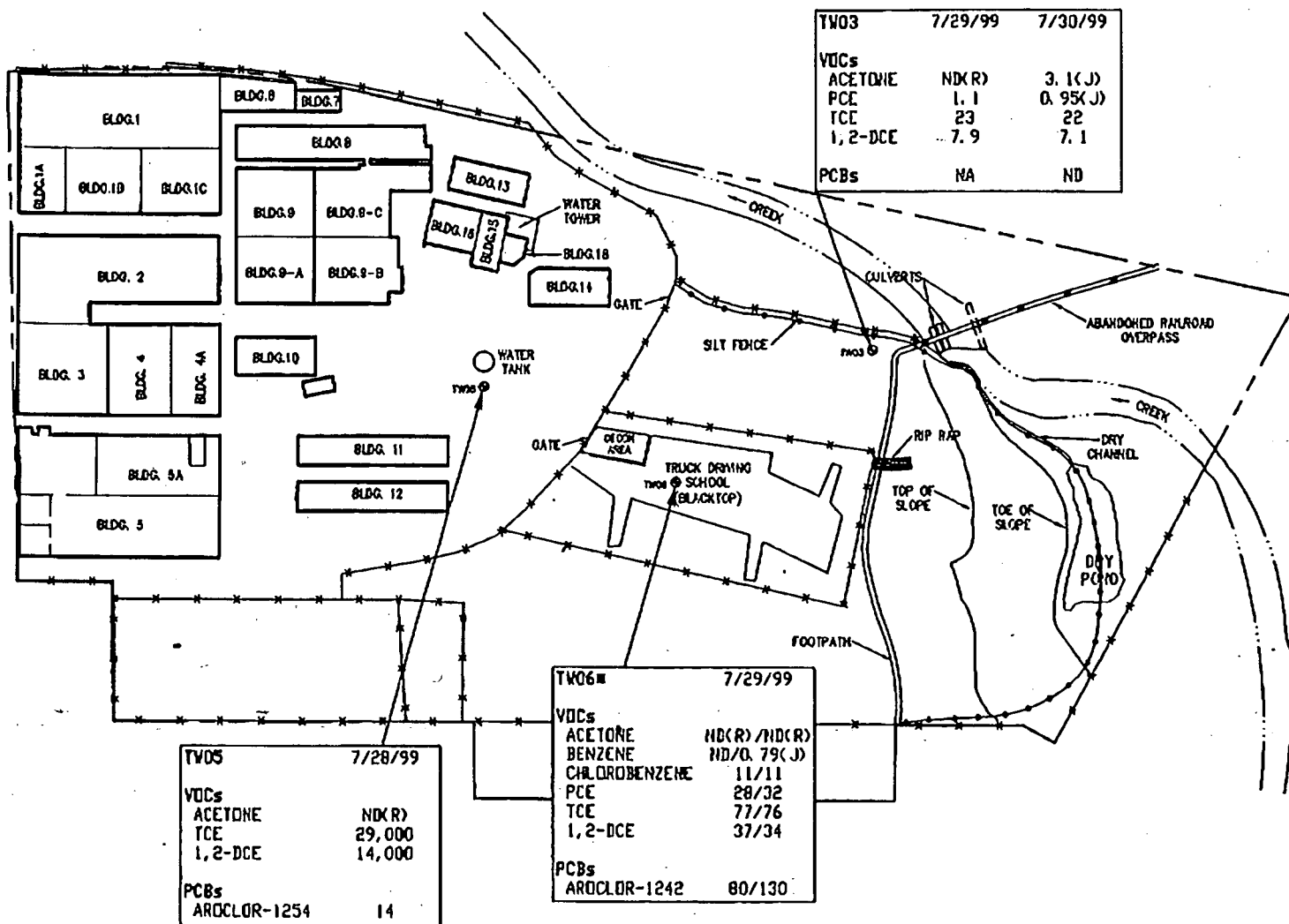
SITE PLAN
HAMILTON INDUSTRIAL PAK
SOUTH PLAINFIELD, NEW JERSEY

FIGURE
1

DRAFTED BY: KPM

DATE: 10/19/99

5840ABM2



0 150 300
Scale in Feet

LEGEND

- BUILDING OUTLINE
- - - PROPERTY BOUNDARY
- * * * FENCELINE
- SILT FENCE
- ⊙ TEMPORARY WELL LOCATION

VOCs	VOLATILE ORGANIC COMPOUNDS
PCBs	POLYCHLORINATED BIPHENYLS
PCE	TETRACHLOROETHENE
TCE	TRICHLOROETHENE
1,2-DCE	1,2-DICHLOROETHENE (TOTAL)
(R)	DATA REJECTED DURING VALIDATION
(J)	VALUE ESTIMATED
ND	NOT DETECTED
*	DUPLICATE SAMPLES COLLECTED
NA	NOT ANALYZED

NOTES:
ALL CONCENTRATIONS ARE IN $\mu\text{g/L}$ (PARTS PER BILLION)
TEMPORARY WELL LOCATIONS ARE APPROXIMATE.

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TEMPORARY WELL LOCATIONS AND GROUND WATER SAMPLING RESULTS (JULY 1999)
HAMILTON INDUSTRIAL PARK
SOUTH PLAINFIELD, NEW JERSEY

FIGURE
2

DRAFTED BY: KPW

DATE: 10/18/99

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